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GLEANINGS IN BEE CULTURE

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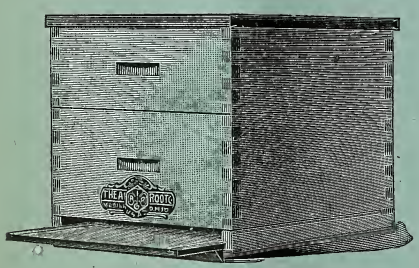

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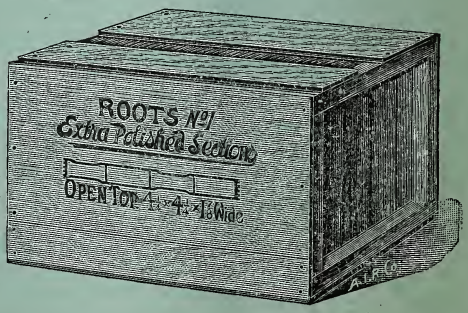

The A. I. ROOT Company,

144 East Erie St., CHICAGO, ILL.

GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

ILLUSTRATED SEMI-MONTHLY

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Vol. XXXII. AUG. 15, 1904. No. 16

YOU KNOW that oftentimes bees will start afresh to build cells right on top of a sealed surface if there is room for it. I wonder if you also know that the bees will never uncap honey that is under cappings upon which they have started the second tier of cells.

COMB-BUILDING is likely to stop when a colony becomes queenless; and if any comb is built it will be drone comb. The building of worker comb is a pretty good sign that a queen is present. But worker comb may be built in a queenless colony *if weak enough*. [Correct so far as we can observe at Medina.—ED.]

A FOREIGN JOURNAL—I don't recall which—gives as one way of improving stock the plan of leaving undisturbed all queen-cells in a colony which has swarmed, and then returning after-swarms as fast as they issue. If all cells but one are cut out, that one which is left may be the poorest in the lot: if all are left, and after-swarms returned, there will be a battle royal each time, and finally the best queen of the lot will remain victor.

AFTER SLUMBERING quietly for years, that foolish canard that, before sealing their honey, the bees sting poison into it and then use their stings as trowels to cap it over — a wild imagining with no sort of basis in fact—I say that foolish canard has again come to light. The *Western Bee Journal* prints it, apparently in sober earnest. Bro. Adelsbach, better tell your readers that the item should have come under the head of romance.

IN REPLY to J. A. Phillips, the same candy used in introducing queen-cages is also used for feeding bees. Take perhaps an eighth as much best extracted honey as the candy you want; heat, but don't burn; mix in all the powdered sugar you can; then knead in more sugar on a bake-board till you make a stiff dough; let stand two or three days, and, if it has softened any, knead in more sugar. [This accords with our experience.—ED.]

TO FIND from which colony an after-swarm came, J. Georges gives this in *L'Abeille Alpine:* Early next morning, before bees are flying, take a hundred or more bees of the swarm, shut them in a tumbler with some flour, tumble them about till they are well floured, then free them and run to the apiary to see which hive they enter. "Early next morning" is perhaps new. [This may be a very useful kink to remember. Sometimes it is desirable to know whence the bees come.—ED.]

H. C. MOREHOUSE says in *Western Bee Journal* that the rule to put on supers when the bees begin to whiten the combs at the top is about ten days too late out West. Isn't it too late anywhere? Do they ever put white wax on the upper part of combs till crowded for room? and will not as much crowding as that go a long way toward starting them to swarm? [It all depends on what is meant by "the bees begin whitening the combs." I fear the language is liable to be misunderstood by beginners, with the result that they wait too long, and swarming is the result. Perhaps our text-books should be a little more explicit.—ED.]

NO QUESTION about it. Swarthmore, Laws, and others in the miniature fertilizing business have led to the settling of the fact that virgins may be fertilized in a nucleus without any brood, and with a much smaller number of bees than we have been in the habit of supposing necessary. The question is, will the queens be as good as those reared in the old way? Many years ago I reared queens in very weak nuclei, and the queens were worthless. But then the whole business, from the starting of cells to the laying of the young queen, was

done in the same weak nucleus. Up to the sealing of the cells, and perhaps to the emerging of the virgin from the cell, no colony can be too strong in which to have the work done. Will it do any better to have the succeeding work done without a full force of bees? You have succeeded at Medina in getting queens fertilized with so few bees that the whole force could be put in the shipping-cage. But what kind of work will such a queen do at laying? Do you know any thing about it? I *think* that they will be all right. Perhaps the wish is father to the thought. At any rate I'll probably know something about it some of these days, for I have a queen which will be tested in a full colony which was fertilized and began laying with probably not more than a dozen bees to give her aid and comfort.

I've had quite a number of queens fertilized without any brood, and with only enough bees to man fully a section of honey. I used common hives. In a very few I used two brood-combs containing a little honey. In the others I used a section of honey in a wide frame, either alone or with a dry brood comb. From a colony with a laying queen I took a frame of brood with adhering bees, shook into the nucleus enough bees to cover well the section, dropped in a virgin not more than a day old, closed up tight, and didn't open the entrance for 60 hours or more.

"Wouldn't these bees, not being queenless, kill the virgin queen?" Not a bit of it. A virgin queen will be kindly received in *any* colony, even one with a laying queen, *if the virgin be young enough*. (If a laying queen is present the virgin is likely to be killed after she is two or three days old). It's less trouble to give a ripe cell, and so far I like it fully as well.

I think the queens are slower about laying than with stronger nuclei, but the losses are hardly more, up to the time of laying. But unless confined by excluder, the young queen is likely to skip soon after beginning to lay.

A curious thing is that robbers do not trouble these diminutive colonies, although trying to get under the covers of strong colonies. Only one of the little fellows has been robbed out, and that may have been after absconding. The reason may be the smallness of the entrance, and the great distance from the entrance to the section of honey. [It is to be feared that you and some others of our readers have formed some misconceptions regarding these miniature nuclei and the scope of their usefulness. See editorial elsewhere.

I will say right here that these little lots of bees will not prove to be satisfactory unless they have brood, a little feeding, and they must be handled without smoke the greater part of the time.

Queens lay in our miniature nuclei quite promptly — no slower, I think, than in the larger ones. Note the important requisites in the use of these little mating-boxes.

A year ago, when we used smoke in opening these little boxes we had some trouble from robbing; but it may be that these small lots of bees are too insignificant to attract very much attention. We have had only one case of robbing from them, and then it was when an inexperienced operator went to handling them over with smoke.—Ed.]

Bienen Zeitung says that, as the queen lays only worker eggs the first year of her life, the finest combs are such as are made by first-year queens.

Bienen Zuechter says fermented pollen is often the cause of spring troubles among bees. A writer says a bottle of good beefeed, in which a few drops of fruit brandy have been mixed, will cure the trouble. Quite likely the efficacy of the brandy is all imagination; but if confined to the bees the risk is not great.

Some new way to destroy ants comes up with commendable regularity. A German writer says, in *Bienen Zuechter*, if a hole is made in an ant-hill, and a lump of camphor put in and tamped over, the ants will seek new quarters. A good dose of borax poured in will answer the same purpose, and costs practically nothing. At times ants are annoying to bees, and their hillocks are unsightly at best.

A writer for a German bee journal, livin Calabria, Italy, says he has for years used lemons to attract swarms. He says, "Our bee-keepers attract their swarms in a few minutes, and get them where they wish, be it in a log, a hive, a box, or even in their hat. To do this they simply rub some bits of lemon or lemon leaves in the places designed for swarms. Some use essence of lemon." There's no doubt that bees like the odor of lemons. Who doesn't?

A friend wisely suggests that, if some of the energy that is now used to get editors to recant who have been guilty of saying that comb honey is mostly manufactured could be used in informing said editors beforehand in regard to the facts, the canard would not see the light so often. It occurs to me that, if the General Manager of the National would put this whole matter in the form of a pamphlet, illustrating fully the use of foundation, and giving a history of the canard in question, and send a copy

to the leading journals of the great cities, it would prevent the insertion of stories so inimical to bee-keepers. The cost would be slight, and the novelty of such a bulletin would immediately arrest attention. Mr. Benton's letter to the Pittsburgh *Gazette*, reproduced in this issue, would be indispensable in this connection. The fact is, no man of good judgment would believe the story after having had the matter of comb foundation fully explained to him, together with the further fact that bees can produce combs incomparably cheaper than man. No editor would print a manifest absurdity of this kind if he knew all the facts. On the other hand, most of them dislike to make an explanation after the fault has been committed. They would rather have it forgotten. When a man is so nearsighted as to put salt in his coffee, in place of sugar, he is very apt to say, rather than have the laugh on him, "I always take it so." Post the editors. Prevention is better than cure.

In the July number of the *Review*, Mr. Hutchinson has an excellent editorial on how to treat those who have published the senseless stuff about manufactured(?) comb honey. He says, "Above all things, don't be abusive; don't bluster; don't threaten." That's good advice; but it is rather hard to follow it when the statements are so palpably false, and especially, as in the case of the Massachusetts professor, the writer attempts to maintain his point. As to the origin of the story, Mr. Hutchinson says Prof. Wiley "deeply regrets his indulgence in this 'scientific pleasantry,' and is doing all he can for the good of bee-keepers; but this does not undo the mischief he has done." There are good reasons for thinking that this canard has nearly run its course. With two prominent journals retracting, it will be easy to get more, and then all will come over on our side in a bunch like a flock of sheep.

The bee-keeper of England are engaged in a warm controversy as to whether they shall endeavor to have a foul-brood bill passed by the British Parliament for their benefit. The arguments against such a measure seem ludicrous in view of the marked benefits derived from such legislation in Canada and the United States. The ravages of the diseas in England seem to be rapid and severe according to the British Bee Journal. One writer says it would cost $2500 to get such a bill through the House of Commons, and doubts the possibility of their getting for a long time, in the shape of a law.

While tendering our votes of thanks to the poets, song-writers, etc., of beedom, don't forget artist R. V. Murray, who has done more than any other man living to delineate every thing pertaining to bees and hives. I am frequently surprised at the rough sketches of hive-fixtures that are sent him, and the new dress in which he returns them.

What W. K. Morrison says in this issue about Haiti is worth remembering. It is a pity that that beautiful island should be given over to anarchy and scenes of bloodshed that "stagger humanity." What a place for honey if they had a stable government like this!

HOW TO FIND A QUEEN.

"Good morning, Mr. Doolittle. I see by the looks in your apiary that your bees, like mine, are very strong in numbers."

"Yes, Mr. Jones, there are lots of bees in the hives now, as is usually the case during and just after the basswood flow."

"Well, what I want to know is this: How do you find the queen of such a colony as this one, where the hive is apparently as full of bees as it can stick? In short, tell me how to find a queen at any time of the year."

"To the accustomed eye of the practical apiarist, prolific queens are quite easily found, especially if the bees are of the Italian race, or the time of the year is about fruit-bloom; but a virgin queen of the black or hybrid race often elludes the watchful eye of an expert when he is looking for her."

"But I am not an expert. Have you no rules you go by?"

"I should hardly want to say that I had. But to find a prolific queen the time to look for her is on a nice day when the bees are at work in the fields, or between the hours of 9 A.M. and 3 P.M. If you look at such times you will find her, more often than otherwise, on one of the two outside combs which have brood in them."

"Then you don't mean the outside combs in the hive?"

"No, not unless the outside combs in the hive contain brood. If they do, then look for her there. If there are only five frames in the hive having brood in them, then she will be liable to be found on one of the two outside combs having brood in."

"But how am I to tell about where these outside frames of brood are without hauling out a lot of combs that have no brood in, and set the queen to running away?"

"You do not need to handle the combs so roughly that you set the queen to running, even should you not take out the right frame the first time. But if you will allow the bees to come up between the frames after you have blown a little smoke over them in opening the hive you will soon be able to lo-

cate the outside frames of brood by the amount of bees between the ranges of combs, unless the hive is full of bees and brood."

"I was told, that in the morning or near sunset was the best time to handle bees."

"This was a mistake, no matter what you are handling bees for, and especially when looking for a queen. Where I am obliged to work early or late, I rarely find a queen on the outside frames of brood, but generally in the center of the brood-nest. But remember we are talking of a colony whose brood-nest has not been interfered with. If an empty comb is inserted anywhere in the brood-nest, the queen will be quite likely to be found on this comb 24 hours later; but in such case the brood-nest would not be in a normal condition."

"Then just at sunset is not a good time to look for queens? Here is a part of my trouble, for I had looked near sunset."

"Near sunset does not give a good light, even were the hive not crowded with bees at that time. To find any queen, the best time to look is from 11 A. M. to 1 P. M., as at that time the most bees will be in the field and out of the way; and if your hives face south, as is generally the best way to face them, the sun will shine quite directly between the combs; and the light thus striking them will show you the queen much better than at any other time."

"That is a point I had not thought of."

"This is a great help; and if you sit or stand with your face to the west before noon, and face east after noon, the sun will not shine in your face, and you will also be looking on the combs where the rays of the sun light every thing up."

"This is also a new thought, and I should think it would help much; for when the sun shines on the front of my veil it interferes very much with my seeing well."

"That is right; and you should always have a light box with you, about two inches wider than your hive is wide; and when opening the hive, do it as carefully and with as little smoke as possible; for if you are careless, and jar the hive much in opening, the bees will get angry, while the queen becomes excited and runs about and off the place where she was laying, sometimes into the corners of the hive, or clear out of it entirely."

"That shows me another of my mistakes, for I have at times gotten the bees so angry by my clumsy handling that I have smoked some colonies till the most of the bees ran out of the hive; but I did not suppose the queen would ever run out. But just tell me the whole proceedings of finding any queen in a hive that is full of bees as they are now."

"About eleven o'clock, having opened the hive so carefully that the bees hardly know they have been disturbed, and as carefully removed the first frame on the side of the hive next to you, look it over for the queen. Having satisfied yourself that she is not there, set the frame on the further side of the box from you, and take out the next from the hive, carefully looking it over and setting it in the box as you did the first. On lifting the next frame you will have plenty of room so you can readily look down into the hive and on the face side of the comb next to you; and as the sun lights up all as 'plain as day,' if the queen is on the face side of that frame you will see her at a glance as she attempts to run around to the opposite or dark side of the comb, as nineteen out of every twenty queens will attempt to do when the strong sunlight strikes them. If you do not see her, immediately swing the frame you have in your hands so the sunlight will strike the opposite side of the comb, or the side that was from you when you lifted it from the hive, for the queen will be on one of these dark sides, if anywhere. Now set this comb in the box, if you have not seen the queen, and proceed in the same way with the next, and so on till you find the queen, or all of the frames are out of the hive and in the box. It is a rare thing I miss in finding the queen in going through a hive like this, no matter what the queen, and whether laying or otherwise; and if, in the prolific part of the season, or before the hive is full of bees and brood, I do not usually have to lift more than three combs at most before I find her, if I keep in mind that she should be on one of the two outside combs of brood."

"But what about that case where you do not find her before you have got all of the combs in the box?"

"If from any accident I have jarred the hive, or got the bees uneasy or smoked too much, I now look among the bees that are left in the hive to see if she is there; and if I do not find her I proceed to set the combs back in the hive again, from the box, in the same way they were set from the hive out. But there is this difference: The box being wider than the hive, I can look on the dark sides of the combs when lifting the first comb from the box, so that I do not have to look the first two combs all over while in my hands, as I did when taking from the hive."

"Do you ever miss finding the queen in setting back from the box?"

"I remember only one such case during the last five years."

"What do you do where you miss in finding both times?"

"Where such a thing as a failure should occur, the hive is closed, and a trial is made some other day."

"How fast can you find them, on an average?"

"In the spring of the year, when seeing that all have their wings clipped, it takes but a short time to go over the whole apiary. But at this time of the year it is more slow. I went to the out-apiary a few days ago to look for and clip some queens where I had given cells three weeks previous, and I made a record of nine in an hour, with hives overflowing with bees, and supers to take off and adjust again. I wish I could do as well at any time of the year."

DR. PHILLIPS AND HIS SCIENTIFIC ARTICLES; THE SENSE OF SMELL IN BEES.

I HAVE asked Dr. E. F. Phillips, of the University of Pennsylvania, to prepare several articles detailing in a popular way some of the things he has learned in the line of scientific bee-lore here at Medina during the last few weeks. He is a trained zoologist in the regular employ of the university which he represents; and I apprehend that some of his investigations will be of great value to bee-keepers. Some of the things he tells me on the bee's sense of smell have been quite interesting to me, and I believe they will be equally so to many of our readers. In accordance with my request he has prepared two articles, the first of which appears in this issue. These studies are not without their practical value. I believe it will pay our honey-producers as well as our queen-breeders to read these very carefully, more particularly as they will enable us to explain many of the phenomena connected with our pursuit, and perhaps put us in position whereby we may be able to improve our methods and introduce shorter cuts.

Dr. Phillips is very conservative, careful, and conscientious in his work. Trained scientist that he is, he is very slow at drawing conclusions, and in one case that I know of he took thousands of measurements before he formed an opinion. He has read all the bee literature that bears on the subject he has been investigating; and in this connection it may be interesting to know that he bestows unstinted praise on the naturalist Huber, whom he regards as having been one of the most accurate observers who has ever written on bees, especially their general habits, for Dr. Phillips has, in addition to his wide reading, been sitting down before an observatory hive for hours and days at a time, to get his information. I am not at liberty to make public some of his discoveries, but these will appear in due time, or as soon as he is prepared to give them to the public. He is not much given to wild speculations, and the reader need have no fear that he will launch any thing on the public like the Dickel theory, although he says Dickel himself, in spite of his erroneous conclusions, made some important observations.

A RE-REVISED HONEY-CROP REPORT FOR 1904.

REPORTS have been coming in from all sides and from all parts of the country. There is not much to say in addition to what has already been said, except that the crop in the Northwest, including Minnesota, Iowa, and Wisconsin, seems to be very much lighter than it was a year ago. It also seems to be quite apparent that the aggregate crop for the entire United States will be lighter than it was last season.

While we have had reports from honey-producers from various parts of the country, and endeavored to summarize their statements, it seemed to me it might be well to get a statement from the commission men and buyers in the principal markets, and accordingly I drafted the following letter:

Dear Sir:—We are anxious to get at the amount of honey (comb and extracted) that has been produced this year. While it will be impossible to get the total aggregate, we think we can, perhaps, get a comparative estimate of the yield for 1904. We should be glad to have you send us a brief report, based on the best information that you may have, of the probable amount of honey that has been produced this year as compared with last. This you can determine somewhat by the number of offers you have had to furnish honey, and the aggregate amount as compared with last year.

We are of the opinion that we had a large crop of honey throughout the country last season; but many bee-keepers held back until after the holidays, expecting a rise in price. This gave a false estimate of the amount of honey on the market at the beginning of the season. Then when these crops were unloaded it produced a slump. We should like to get from you a brief statement of two or three hundred words, giving your impressions of the crop for 1904, based on information that has come to you from various sources.

THE A. I. ROOT COMPANY.
E. R. Root.

The replies will speak for themselves.

We have received more honey this July than we did last, but the outlook for a crop is not as good as last year. From what we can learn from Iowa and Missouri there will be from a fourth to a half of what honey there was last year, taking it as a total; but as the stands are more in some sections than in others it is hard to estimate exactly what the crop conditions are; but we believe the above statement on Iowa and Missouri will about cover it. We understand from some sources, however, that Kansas has a big crop, but a great deal of it will depend on the late run of honey.

C. C. CLEMONS & CO.,
Aug. 3. Kansas City, Mo.

It is impossible for us to give you any correct figures in regard to last year's crop of comb and extracted honey, as the market, the entire season, has been in an irregular condition. There were large quantities of comb honey carried over of the 1902 crop, and almost every dealer in this market was overstocked on the article, and little new comb honey was brought here in carload lots. We, at least, don't know of a single car which came to this market. The situation was almost the same on extracted honey, and there is some of the 1902 crop of extracted honey held in this market yet. The offerings of honey were numerous last year, but more so this season for new honey. The demand is very limited as yet. Quotations are more or less nominal.

R. HARTMANN & CO.,
Aug. 4. St. Louis, Mo.

It is a little too early to give a fair estimate of the honey-crop for this year. It is, however; a fact that so far the bees have done very little. To start with, a great many bees did not get through the very severe winter; then the clover-blossom was a failure, with a good deal of wet weather to hinder bees from working. They are now working in basswood, which promises to yield well; but on the whole we can not expect more than half an average crop. So far as I can learn, there is very little honey carried over from last year, so we think prices will be a little higher than last year. Honey, however, is an article that will be used only at a certain price. When it goes beyond that, other things are used in its place. Therefore, in spite of the short crop we do not think it will command more than an ordinary price.

M. MOYER & SON,
Aug. 4. Toronto, Can.

So far as I can learn at this time, the crops of honey around here are about the same as last year. Some bee-keepers claim, though, that this year's crop surpasses last year's by a good deal. The offers so far have been fully as large as the year before.

C. H. W. Weber,
Aug. 5. Cincinnati, O.

I returned home to-day from a ten-days' trip in Michigan. It is too early to know very much about the new crop. I think the crop will be a pretty good average one. I get some reports of short crops, but think there will be plenty of honey, and do not expect prices will be high. I am afraid prices will not be high enough to cause a free movement of the crop early, and late in the season prices are almost always lower. W. C. Townsend,
Aug. 8. Buffalo, N. Y.

I here give a brief summary of the honey crop in this State, so far as we have reports:

Northern Colorado, a fair crop if conditions remain favorable from now until close of season.

Arkansas Valley, above Las Animas, same as Northern Colorado.

Arkansas Valley, below Las Animas, poor crop.

Delta and Montrose Counties, very light crop.

Mesa County, good in some places, below average in others.

Southwestern Colorado will have a fair crop.

It is too early for this locality to give a reasonably accurate estimate of our honey. There is not much honey taken off yet, and second crop of alfalfa is just commencing to bloom. Whether we shall get any honey from it remains to be seen.

The Colorado Honey Producers' Ass'n.
F. Rauchfuss, Mgr.,
Aug. 5. Denver, Col.

While we have not all of our reports in as yet, we think we can form a pretty good idea as to the outcome in different localities. Southern California claims a total failure; but we understand that about 100 to 125 cars were carried over from last season. Central California, or the San Joaquin Valley, expects to have a usual crop, the same as Arizona. Texas reports a light crop, as well as Louisiana. In Georgia the crop seems to be good; in Florida we think they had the largest crop they have had for years, especially in the western part, as we have received more honey from there this season, and have had more offerings than ever before. We have no reports as yet from Colorado, Utah, and those points, but have reports from the middle West which would indicate a rather short crop, mostly on account of the loss of bees. Vermont reports a fair crop, so does Pennsylvania; and so far as New York is concerned, the reports vary from a failure to a large crop. In some sections they have very little honey, while in others they have more than last year, and better quality in spite of the loss of bees. As a whole, while the crop is not as large as that of last year we think that a fair average crop has been produced east of the Rocky Mountains. Hildreth & Segelken,
Aug. 3. New York.

Replying to your request for information regarding the honey crop, we find it somewhat difficult to get the information, several bee-keepers, refusing to answer questions of that nature on account of sharp dealers who have used such information to the injury of the bee-keeper. From reports received so far, we have no doubt there will be considerably less honey this season than last. Several report very good yields from what bees they have left; but in most cases about half died during the winter. In our locality bees have done well, and are still at it. The season opened late, but it is also holding out later than usual. Our own bees are in fine shape. Our loss was 10 out of 85 during winter; 5 afterward, owing to bad spring, queenlessness, etc. We have several colonies four stories high, ten-frame hives full to the top. Our bees all wintered outside. From down east we have received several good reports, although the loss in bees will make the honey crop short of last year in almost every case. We are with you every time for *honest reports*.
Toronto, Aug. 6. E. Grainger & Co.

In regard to the honey crop of 1904, we wish to state that, from the information we have received, and considering the great loss of bees, the honey crop throughout the lake region will be about half what the crop was for 1903. There has not been a season, according to our reports, where bees have built up and increased as they have this season; and while the crop will not be nearly as large accordingly through this section of the country, yet it is of excellent quality. However, as in the case of last season, a great many bee-keepers (anticipating a shortage of the crop through the loss of bees last winter) are holding their crop, expecting a large price later in the fall; and we desire to state that the market here at the present time remains the same as last season, and the receipts of fancy comb and extracted honey are equal to the demand. We have had very little trouble as yet in securing what fancy and No. 1 grades we can use; and it has been our experience that honey brings a much better price early in the fall than it does later in the winter, and we think the majority of bee-keepers are making a great mistake when they hold their honey for an unreasonable price. Griggs Brothers.
Toledo, O., Aug. 5.

Replying to your inquiry in regard to the amount of honey produced up to the present time in our section of New York, we would say that we believe from information received from producers, bee-inspectors, and others, that the crop is at least one quarter larger than last year, and of fine quality. One producer alone, near us, is reported to have eighteen tons of white extracted already, with buckwheat yet to hear from. Of course it is too early to form any estimate on the latter crop, as so much depends on weather conditions. Last year the yield from buckwheat was unusually small—this year it may be large. We hope it will, for the sake of our friends the bee-keepers.
Schenectady, N. Y., Aug. 2. Chas. McCulloch.

Northern New York, 25 per cent more, and better quality.

Southern New York, poor quality, the same as last year.

Eastern Pennsylvania, 25 per cent over last year.

Delaware and Maryland, about the same.

Michigan, same as last year.

Wisconsin, uncertain but present reports show about the same.

Illinois, somewhat less than last year.
Philadelphia, Penn., Aug. 3. W. A. Selser.

While, possibly, some of the writers may be a little biased in their statements, yet I think that, in the main, what they have to say is inspired with the desire to give the actual facts so far as they know them.

COMB-HONEY CANARD WITH A HANDSOME RETRACTION.

On page 745 of our last issue we referred to a sensational article published by the Pittsburgh *Gazette* for July 24, to the effect that artificial combs were made of petroleum, and that artificial comb honey looked so much like that produced by the bees that the two could not be told apart, even by experts. We immediately sent in our protest, as will be remembered, and urged our readers to do likewise.

I am pleased to announce that, in the issue of the aforesaid journal for Aug. 7, appears a hadsome retraction, closing with a strong letter of denial from Mr. Frank Benton, of the Department of Agriculture, Washington.

That our readers may see it pays to follow up these things closely we publish it, headlines and all.

It is evident that the force of numbers backing up a letter from a government official had its effect. We asked one of our subscribers, Mr. E. R. Munn, who expected to be in Pittsburgh, to call and see the editor of the Pittsburgh *Gazette*. In the course of conversation that individual remarked, "By the way the letters are com-

ing in, you bee-men must stick together better than the Masons." You see, therefore, dear readers, it pays to "stick together," and it pays to deluge these offending editors with letters. Coming in one at a time or dozens at a time or from hundreds at a time, they keep that functionary in a state of nervous excitement until he is glad to stop the "howl" by publishing a correction. Here is the extract:

RUSH TO DEFEND BUSY LITTLE BEE.

STATEMENT THAT HONEY-COMB IS MADE FROM PETROLEUM PRODUCTS RAISES BREEZE.

Many Letters are Received. United States Department of Agriculture Writes The Gazette that Nothing has so far Supplanted the Bee in Producing Honey that is Fit to Eat.

The busy bee has many defenders. They won't stand for any statements that the bee is to be put out of business by any unprincipled manufacturer who says he is able to make artificial honey-comb or artificial comb honey. This defense of the bee is the result of an article printed in The Sunday *Gazette*, July 24, in which it was stated that honey-comb is made from the refuse of petroleum.

Hardly had the paper been printed before letters of protest reached *The Gazette*. They were from owners of bees and manufacturers of bee-supplies. All voiced the same statement, that the bee and its owners had been grossly libeled. And eventually your Uncle Samuel got busy, and the following letter was received from Frank Benton, M. S., Agricultural Investigator, in charge of Apiculture, Bureau of Entomology, Department of Agriculture:

To the Editor of *The Gazette:*

Dear Sir:—Artificial honey-comb is not made from oil, petroleum, paraffine, wax, nor any other substance; and it is absolutely impossible to duplicate natural honey-comb in such a manner as to deceive any person who chooses to compare any attempt at artificial production with the natural product. Even were it possible, the cost of manufacture would exceed many times the price which could be obtained for the finished product. In fact, the cheapest manner to obtain an article which may be sold as honey-comb would be to employ a large number of colonies of bees to gather it from the boundless resources of nature, not one-tenth of which in the present state of the industry is utilized. To fill combs, whether artificial or natural, with any substance, perhaps slightly flavored to give a honey taste, would not produce an artificial product ready for use. The finished article must be sealed with wax, or some similar material, which is not by any means the slightest difficulty in the way of the skillful imitation of nature's product.

As a general comment on the question of whether such a thing as is here described does occur or not, allow me to state that, for some 20 years past, one of the leading firms engaged in the manufacture of apiarian supplies, having in connection with its establishment also a large apiary—toward 1000 colonies of bees—to supply the calls for genuine honey which it receives, and being also a large purchaser direct from the bee-keepers, has offered to forfeit $1000 cash to any person able to bring forward a single pound of comb honey produced artificially which was sufficiently perfect to deceive even a superficial observer. This firm is wholly trustworthy, and able to carry out the offer in question when the conditions are fulfilled. During all this score of years no person has ever claimed the forfeit, yet the offer has been published far and wide.

The basis for stories regarding adulteration of comb honey which have from time to time gone the rounds of the papers lies probably in the fact that comb foundation is made from beeswax, and used both in securing the building of large combs in the brood apartment of the bee-hive, and also in the sections for the securing of surplus honey. This is merely a sheet of wax rolled out until very thin, and then impressed with the hexagonal outline of the bees' cells. On this middle wall which stands as the basis of the cells, the cells themselves are erected by the bees. The comb foundation which is used in the surplus receptacles—the little pound sections commonly seen on the market—is so very thin that little or no objection has existed to its use. Furthermore, it should be said, to the very great credit of American manufacturers of comb foundation, that, quite in contradistinction to many of those in Europe, they have adhered very strictly to the use of nothing but pure beeswax, most carefully clarified, and handled in a very clean manner. Of this I am certain from the fact that I have been a user of these artificial foundations ever since their manufacture was placed on a commercial basis 30 years ago, and have frequently visited leading factories where they are made.

That glucose is sometimes used as an adulterant for liquid honey is well known. This work is almost wholly that of dealers in and manipulators of honey—shrewd merchants in cities—not the producers of honey themselves. Bee-keepers are the most strenuous advocates of a pure-food law which shall oblige the branding of all goods as to their exact contents. They desire this for the suppression of adulteration, and in order that their own honest products should not meet with unfair competition.

To imply that bee-keepers purchase and use the combs which it is alleged are made from the waste products of oil is not only impeaching their honesty, but likewise their intelligence, since they can have the wax produced by their bees from nectar, which the bees gather more cheaply than it would be possible for bee-keepers to obtain any artificial product and secure its filling with sweet substances that might pass with a portion of the public for honey.

The above is as good a retraction as I have seen. In our next issue I hope to show that in another instance, at least, where the subscribers of bee papers were asked to send in their protest, it was not without its effect. Courteous letters sent in to the publishers by the hundreds have a *tremendous* effect. While it is true that these retractions do not undo all the evil created by the first article, yet they go a long way toward it.

BEE-KEEPERS should not forget the date of the next National convention at St. Louis, Sept. 27—30. In connection with the nomination of officers there is an important announcement under the head of "Convention Notices" on page 821, this issue.

MINIATURE QUEEN-MATING NUCLEI; ESSENTIALS TO SUCCESS; SOME MISCONCEPTIONS CORRECTED.

IN view of the fact that Dr. Miller in Straws, in this issue, has possibly misunderstood the editorial on this subject on page 743, it seems proper that I should go over this ground a little more carefully in order that honey-producers, not necessarily queen-breeders, may not make a mistake and declare the small nuclei a failure.

It should be clearly understood that miniature nuclei of 100 or 200 bees are *not* to be used for *rearing* cells. While they may be used for *hatching* ripe cells, as a general thing they are not to receive virgins before they are four or five days old. The purpose of these nuclei is simply for *mating* queens—this much and *no more*. The cells should always be reared in strong colonies, generally two-story, under the swarming or superseding impulse brought about by light feeding every day if honey is not coming in. Right here we follow the teaching of Doolittle. In our queen-rearing work the virgin hatches out into a strong colony and is fed for the next two or three days of her ex-

istence in such colonies. She is then introduced to the little mating nuclei, and when she begins to lay she is sold. In a word, she is cradled, if I may coin a word, up to the time of mating, in a strong colony that is in the highest state of prosperity; and when she is old enough to seek her own "gentleman company" she is given board and lodging in a small family, so to speak. But even here this little family is fed a little every day so there may be no lack of food; and every inducement is made to get the young lady to lay at the earliest time possible.

I had supposed it was generally accepted by honey-producers and queen-breeders alike, that, if a young queen were cradled up to the time of mating in a strong colony, she would be as vigorous as any queen could possibly be; that mating in one or two standard-sized-frame nuclei, or even in the miniature boxes, would in no way impair her future usefulness. Indeed, I do not see how it could. In the little mating-boxes she is given lavish attention, and, what is more, the little cluster of bees is much more peaceable and quiet than a larger cluster, hence much less liable to worry the queen.

How any one could take the position (and I am glad to know that Dr. Miller does not) that a queen cradled in a strong two-story colony, and cared for up to within three or four days of mating, could be rendered less vigorous by having mated in a miniature nucleus is something I can not understand; and I can only assume that the correspondent who does take that position has it in his head that these baby nuclei are used for cradling as well as mating the queen.

But Dr. Miller, in Straws, seems to imply that these miniature nuclei may not be supplied with any brood. I doubt if this would do. They must not only be fed, but be kept supplied with brood or they will swarm out. This is very important. And, again, they must not be smoked like ordinary colonies. As a rule they should be opened up without any smoke at all. Bees are probably guided largely by scent in their recognition of robbers. If we smoke a large colony there are only a *very few* individuals that get any smoke; but if we were to smoke a miniature nucleus *all* the bees would be scented. This makes it difficult for them to recognize a robber, and hence the reports of these little baby nuclei being robbed out.

Another important essential is that, when these nuclei are formed, the bees must be confined at least three days, otherwise they will desert and go back to their old locations.

Now, then, those of you who have to do with mating nuclei should understand, first, they must be supplied with brood; second, they must be fed a little right along if no honey is coming in; third, they must not be smoked; and, fourth, must be confined for at least three days at the time of forming.

In addition to what I said about the successful working of these miniature nuclei in mating queens and nothing else, I wish to go on record as saying that the results have been even more favorable than last reported. We have a larger number of them in use, scattered over the yard, and robbing has been at its worse; and notwithstanding that these little boxes are supplied with feed in very small quantities almost continuously, it is a noticeable fact that there is no robbing around them. If we were to smoke them every time we open them up, judging from past experience, I should suppose there would be both robbing and deserting.

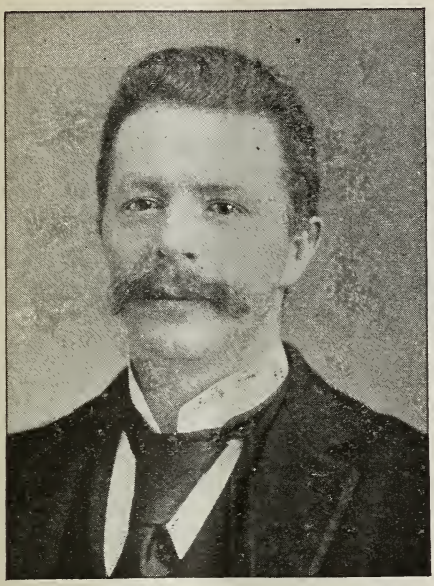
Now, to many of our readers this may seem unimportant, and of value only to the queen-breeder. If any such get that impression they are certainly wrong. Every honey-producer can rear his own stock at less expense and bother, if he can work these small mating-boxes. It is well known that it is an easy matter, comparatively, to get cells and good ones; but up till lately the question of mating was the problem, as so many fourth and quarter size colonies (two and three frame nuclei with standard-sized frame) result in the waste of a lot of bees waiting for the queen to lay. Again, it is no effort whatever to find the queen among a lot of only 200 bees on the combs. She can be spotted instantly.

If our experiments continue to be as favorable with these mating nuclei as they have been for the last thirty days, and if other bee-keepers can make them work, then our good friend E. L. Pratt, better known as Swarthmore, deserves a vote of thanks from the fraternity at large for continuing to stick to these little nuclei, even when the veterans and the queen-breeders had declared that they were a failure. Dr. E. F. Phillips, who visited Mr. Pratt, said the latter used to be very much amused, annoyed, and provoked when old queen-breeders of experience would assert in the journals that his miniature mating-boxes were a failure. Gleanings, for one, is willing to come out and recant.

"BEE-KEEPING AMONG THE ROCKIES" TO BE EDITED BY J. A. GREEN.

The short time the new department, "Bee-keeping among the Rockies," has been running in these columns has convinced us that it was beginning to fill a long-felt want. While it is true we have been publishing articles from Western bee-keepers, yet we had felt for some time that this great expanse of country, west of the Mississippi, deserved more substantial recognition than it has so far received. When we selected Mr. H. C. Morehouse, formerly editor of the *Rocky Mountain Bee Journal*, to conduct a department in these columns, we made a wise choice, for no better man could have been found. But that insidious disease, known in latter days as appendicitis, took our correspondent just at a time when his greatest usefulness and his ripest experi-

ence were at their best, and when, too, he could have done so much for his brethren of the West.



J. A. GREEN.

As soon as we had recovered from the shock of his death, for we had come to love him as a brother, we began to think over whom we would have to continue the department; and the more we thought it over the more we thought Mr. J. A. Green—Colorado—might be our man.

In years gone by he was one of our most valued contributors. He then hailed from Dayton, Ill., and was one of the few contributors whose communications we invariably handed in to the printers without reading until they appeared in galley form. He was careful, conservative, and conscientious in his statements, and withal a skillful bee-keeper. Well, this man, some years later, after the writer had his trip through the great West, made some inquiries about available locations that might be secured where he would not be trespassing on territory belonging to some other bee-keeper. The result of his inquiries was that he made an extended trip, studying the conditions of bee-keeping as they exist in Arizona, California, the great Northwest and finally landing in Colorado. Already an expert bee-keeper before he took this trip, his knowledge of the profession has been greatly broadened; and now that he has finally settled in his new location, he has adapted himself to the new environments to such an extent that he has come to be a part of the great West.

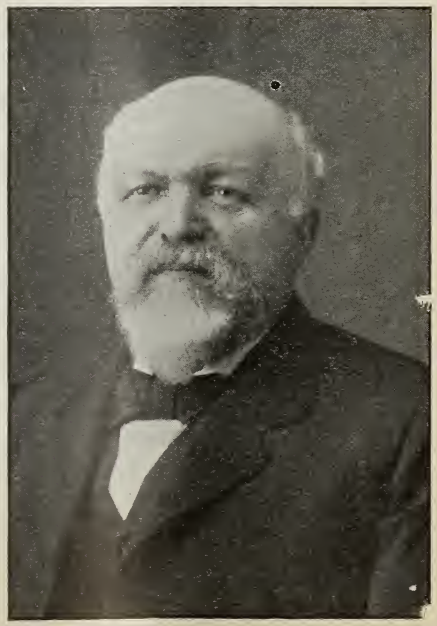
In addition to his wide experience and extended observation in different parts of the United States he is now foul-brood inspector of Mesa County—a position that brings him intimately in contact with a large part of the bee-keepers in his section of the country. Inspecting, as he necessarily has to do, hundreds of colonies, he knows most thoroughly the conditions as they exist in the great Rockies. He is one of the active members of the Colorado State Bee-keepers' Association, and in every way seems to understand thoroughly the conditions as they exist in that arid country.

Well, to make a long story short we have made arrangements with Mr. Green whereby he is to conduct, temporarily at least, the department so ably edited by his predecessor, Mr. Morehouse. I say "temporarily," because Mr. Green is not sure his time will allow him to take up this work permanently. We are glad to introduce again, then, one of our old correspondents, Mr. J. A. Green, as one of our editorial writers. He will begin his work about the first of September.

C. H. W. WEBER AND HIS TWO ABLE ASSISTANTS.

In our issue for June 15 I promised to present a little later a view of more of Cincinnati's "sweet" people; for it will be remembered I then introduced to our readers Mr. F. W. Muth and family.

It is possibly not known that around Cincinnati there center a large number of bee-keepers—perhaps a thousand all told. So active and important are the bee-keeping interests that two of the large supply man-



C. H. W. WEBER.

CHAS. H. WEBER.

ufacturers are represented in that city, and the competition, I should judge, is at times quite spirited. Nowhere else in Ohio can we find so many bee-keepers who are so actively interested in the pursuit. Among the number are scores of professional men as well as those who are engaged in the business for the money they can get out of it. But among all these people no one is more actively interested in bees than Mr. C. H. W. Weber, who for some years worked with the late Charles F. Muth; and when the latter's interests, after his death, were sold, Mr. Weber purchased the business and the good will.

I did not realize that Mr. Weber was so much interested in bees until I met him at the Denver convention some two years ago. well do I remember how he fired question after question at me after we had retired for the night at the hotel. Every thing connected with the discussions of the day previous seemed to interest him to such an extent that he desired to go to the very bottom of it if it were possible. Just about as I would be dropping off to sleep our friend would rise up in bed and ask another question. I do not remember now just what those questions were, except that our friend was so thoroughly interested he could not go to sleep. Some time about midnight, and after I was asleep for the night, there was a fearful crash. On striking a light my brother and I found that Mr. Weber and his friend in the other bed were lying heads downward, for the head of the bed had let go. I can not imagine what broke it down unless our friend was so overwrought with interest that he could not go to sleep, and during the process of wiggling and looking over to see if I were really asleep, somehow loosened the bed fastenings.

Oh, yes! I do remember that Mr. W. was working on the subject of formaldehyde as a cure for foul brood. He had read and studied every thing he could get hold of, both in the German and English languages, and was fairly bubbling over with animation.

C. H. W. Weber was born April 21, 1844, in Lemfoerde, Hanover, Germany. When he was a little over fourteen years old, and after a good schooling, he went to Bremen and hired out to a drygoods firm to work for five years, working for nothing and boarding himself. Before he had finished his allotted time he had done so well he was employed as a salesman, and from that time was paid a salary. Four years after that he made a trip to America, landing in Cincinnati, and finally accepted a position with the late Charles F. Muth as a clerk. At that time Mr. Muth had only three colonies of bees, in old-style box hives. These were transferred to modern hives, Mr. Weber assisting. During Mr. Muth's early experience with bees Mr. Weber was a constant attendant. He finally went into business for himself, and in 1872 he married. As a result of this union

EMMA WEBER.

WEBER'S ROOF APIARY.

the couple have been blessed with a family of ten children—three boys and seven girls, seven of whom are still living.

Since Mr. Weber bought out the Muth estate he has been conducting a large business at the old Muth stand, selling bee-keepers' supplies, bees and queens, honey and beeswax.

In the line of honey he furnishes nothing but the pure article, even going so far as to have samples analyzed that have been sent him, so as to make sure they are absolutely pure. So large have his sales of extracted honey for manfacturing purposes become that the amount aggregates 60,000 lbs. per month. His honey-bottling department has also grown to large proportions, and he now has facilities for bottling 1500 lbs. per day.

Like his predecessor, Mr. C. F. Muth, he has an apiary on the roof of the store, some five stories above the general level of the ground. He has found it necessary to provide sheds, as here shown, to protect the bees, not only from the extreme heat in summer, but from the piercing winds of winter. On the roof of his building he has fifty colonies. Besides these he has two

C. H. W. WEBER LOOKING OVER A FRIEND'S BEES.

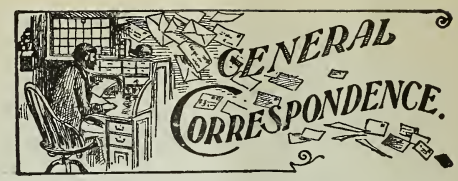
outyards, some four or five miles distant from the city.

Mr. Weber, in the business which he has developed, and into which he has poured his whole soul, is most ably assisted in it by his only son, Mr. Chas. H. Weber, Jr., born in 1880, and his daughter, Miss Emma Weber, born Feb. 29, 1884. When the writer called at their store late last fall it was very apparent that both the son and daughter were about their father's business; and what was particularly noticeable was that they were not afraid of work. Charley seemed to be thoroughly posted in every detail of the business, superintending the supply trade, and at certain seasons of the year goes out on the road as salesman for honey. Miss Emma attends to all correspondence and book-keeping. She it is who looks after the grading, and during the absence of her brother superintends the honey department, seeing that all the goods are put up perfectly clean and neat, and nicely labeled.

At the time of my visit the Webers had just received a carload of comb honey that came in a broken-down condition. Emma was engaged in sorting the honey over, cutting out that which was badly broken, and putting it into a barrel to be sold for chunk honey.

It was quite a cold day for Cincinnati, I should judge, and I remember there was a roaring fire in the stove. All at once I heard a feminine voice calling out, "Charley! come here quick!" Distinctly do I remember how Charley bounded over the cases of honey until he reached the side of his sister, who called his attention to the fact that the crates next to the aforesaid stove were scorching badly, and that there was danger of injuring the honey. Greatly to my surprise, Miss Emma, without calling for any man help, and saying "Oh dear!" in utter helplessness, grabbed hold of one end of those heavy cases, motioning her brother to do likewise at the other end, and carried them further away from the stove. In this way the two picked up and moved hundreds of pounds of honey almost before I could collect my thoughts. I did not at that time know that the girl was Miss Weber, for it seems she was dressed to do a messy piece of work, and evidently did not care to make her identity known, especially to one who sometimes writes up what he sees. In the convention that was held that evening I recognized the same young woman who is here shown, and was then given a formal introduction. Notwithstanding the young lady is capable of lifting heavy crates of honey, she is neither large nor masculine in appearance, but, on the contrary, as her picture shows, the very opposite.

Any father may well be proud of two such able assistants, who have not been spoiled by luxurious surroundings, but have been taught to know the value of honorable work. Nor wonder Mr. Weber's business has been crowned with success.



THE SENSE OF SMELL IN THE BEE.

The Office of the Antennæ.

BY E. F. PHILLIPS, PH. D., OF THE UNIVERSITY OF PENNSYLVANIA.

Any one who has observed bees has seen that they are guided very largely in their movements by the sense of smell. Bees have been known to fly a mile or more over water to reach flowers on an opposite bank toward which they could be guided only by scent.

The celebrated naturalist Huber first discovered that the organs of smell in the bee are located in the antennæ, and he performed some interesting experiments by cutting off the antennæ and thus depriving the bees of their power of detecting odors. I have recently repeated some of his experiments on workers, drones, and queens, with some modifications, and all my results confirm his position.

Concerning the queen, Huber says, "When one of her antennæ is cut off, no change takes place in the behavior of the queen. If you cut off both antennæ near the head, this mother, formerly held in such high consideration by her people, loses all her influence, and even the maternal instinct disappears. Instead of laying her eggs in the cells she drops them here and there." As is well known, a young virgin queen is normally accepted without any difficulty by any colony which has been queenless long enough to know its queenless condition. In experimenting along this line I cut the antennæ from a virgin queen about three hours old, and put her on the comb of an observatory hive, and she was at once balled. This was repeated with another hive. She was rescued from the workers, and confined in the hive in an introducing-cage containing candy, but in a short time died, probably of starvation, for I am sure she was not stung by the bees in the ball, for she was taken out at once and I never lost sight of her. Although there was candy in her cage she evidently did not recognize it as food, since she was not attracted to it by smell, and on account of the loss of her antennæ she was not fed through the meshes of the wire cloth.

When the workers are deprived of their antennæ they remain inactive in the hive, and soon desert it since they are attracted only by light. I cut the antennæ from several workers, and marked them on the thorax to make it more easy to follow their actions, and then put them in an observatory

hive from which they had been taken. The other bees at once recognized that there was something wrong with them, and gathered round them much as they surround the queen, and repeatedly tried to feed them; but the injured workers could not guide their tongues, and consequently did not take food readily. One worker with its antennæ off was put on the alighting-board of its own hive, but was at once repelled and carried away by one of its own hive-mates.

Drones act in a very similar manner, but are f equently rejected by the workers as soon as they are put in the hive. Huber reports that, as soon as the light was excluded from his observatory hive, although it was late in the afternoon, and no drones were flying out, the drones from which the antennæ had been cut deserted the hive, since light was the only thing which attracted them.

From these observations it seems clear that bees recognize each other very largely by scent, but also by touch. The workers and drones operated on were returned to their own hive, and we would suppose that they retained the odor of that hive; but since they were not able to extend their antennæ to the other bees they were at once recognized as differing in some way, and received different attention. Langstroth says of these experiments, "The inference is obvious, that a bee deprived of her antennæ loses the use of her intellect;" but this statement should be modified somewhat, for the intellect is in no way influenced by the operation. The bee continues to respond normally to all sensations which it has the organs to receive, for we see that light still attracts them as it did before; but on account of the one-sided reception of stimuli its actions become abnormal.

It yet remains to be seen which segments of the antennæ receive certain odors, for probably they are not all alike. It has been found in ants that the different segments of the antennæ perceive different kinds of odors, and the same is very probably true for bees.

Medina, Ohio.

HARRY CLINTON MOREHOUSE.

Sketch of the Short Life of the Secretary of the Colorado State Bee-keepers' Association.

BY LEO VINCENT.

On Sunday morning, July 24, at 3:30, occurred the death of Mr. Harry Clinton Morehouse, at his home in Boulder, Colorado, after an illness of but eight days, from appendicitis. At no period during his brief illness was it suspected by those in attendance that the cause was other than stomach trouble, which seemingly yielded to the treatment administered. On Thursday a period of convalescence came on which continued for two days, when suddenly a change came, and the victim rapidly sank to his last sleep. An autopsy, held under proper authority, disclosed the exact cause to be a cancerous formation growing about the lower abdomen, and immediate cause appendicitis.

Mr. Morehouse was born in Marengo, Morrow Co., Ohio, April 15, 1869, being at the time of his death thirty-five years three months and nine days old. In 1893 he with his father, Thomas H., and mother, Mary V. Morehouse, together with a grandfather and brother, removed from Ohio to Guthrie, Oklahoma. There the young man apprenticed in the printing trade and later became a junior partner of the writer. In 1897 he accompanied the writer to Boulder to establish here the *Colorado Representative*. This being successfully accomplished, and having early acquired marked skill

H. C. MOREHOUSE.

in the handling of bees, he sold to its founder his interest in the printing-plant and invested the same with other capital in an apiary in 1900. About this time he was married to Miss Mary Niles, of Boulder. In 1901 he established the *Rocky Mountain Bee Journal*, and conducted the same with great success and recognized ability by reason of his keen scientific insight into the subjects treated. Rapidly did his business increase till this time, when he had under his control by far the largest number of stands of bees of probably any one in the State.

In March last he sold his journal to a

California party, and has since confined his efforts to his apiary and to the duties devolving upon him as secretary of the Colorado State Bee-keepers' Association.

Since coming to Boulder an accident caused the death of his younger brother. Two years ago his father died; a few weeks later an aunt was taken while a near neighbor, and now he has answered the sudden call, leaving an aged mother alone in the world, save a bereaved young wife with little son sixteen months old.

Mr. Morehouse acquired more than ordinary success in his chosen vocation. He was a man of marked characteristics, and one whose manner at once impressed all with his earnestness, candor, skill, and honesty. He stood high in the business and fraternal circles of Boulder; and in the State Association none were more strongly recognized in their profession.

The funeral was held on Tuesday, the 26th, under the auspices of the Christian Scientists of Boulder, of which organization the young widow is a devoted member. The Woodmen of the World took charge immediately thereafter, and escorted a large *cortege* to the grave, and there performed the rights of the order, of which he was a protective member. Quite a large delegation of members of the State Association from over the county were in attendance, and the floral tributes were indeed lavish and most beautiful, signifying in a measure the high regard in which the stricken brother was held.

APIS MELLIFICA OR APIS MELLIFERA.

Which is Right?

BY F. GREINER.

For many, many years our honey-bee has been known among scientists as *Apis mellifica*. It is owing to Prof. Frank Benton and Prof. Cook that the older name, *Apis mellifera*, has been resurrected again, if I am not mistaken. Br. Buttel, Oldenburg, says in *Bienen Vater*, that Linnæus named the honey-bee in 1759 *Apis mellifera*. The Latin word *mellifera* signifies *honey-gatherer*. Linnæus at that time believed, so it appears, that the honey-bee simply gathered the honey and stored it in the combs, as she found it in the blossoms. Two years afterward he discovered his mistake, for he found conclusive proof that hive honey is not identical with nectar; and when he came to the conclusion that the nectar had to be changed to become honey, and that the honey-bee performed this work, he at once changed the attribute *mellifera* to *mellifica*, which signifies *honey-maker*. It seems, therefore, that *mellifica* is the right name, though *mellifera* is the older one. I am the more surprised that Prof. Cook should use the wrong name, since it was he who did so much toward having the bee-keepers understand that honey was not simply the gathered nectar, but digested by the bees and thus changed to honey.

Naples, N. Y., July 25.

[I have asked Dr. E. F. Phillips, a zoologist who is here, to answer this, which he does.—Ed.]

Mr. Root asked me to make a reply to the above article. The question as to which name shall be used for the bee was fully discussed by Mr. Benton in Gleanings for March 1, p. 232. In that place he pointed out the fact that Linnæus, in the tenth edition of his *Systema Naturæ*, gave the name *mellifera*. According to the rules for scientific names this edition is the one which has priority above all the rest, and for that reason the name *mellifera* must be used. It makes no difference how many names were given to the bee before that time, or how many other names have been added since, this name will stand without any change. The question as to which name most nearly designates the bee has no bearing on this. The fact is that either *mellifera* or *mellifica* could properly be used as applied to the bee; but even if its name were *gigantia* or *elephantas* we should still have to use the name which was given to it in that edition of Linnæus. E. F. Phillips.

FEEDING BEES OUTDOORS.

How to Prepare a Feeder with a Tub and a Piece of Cloth.

BY MRS. L. C. AXTELL.

We have no trouble in feeding bees out of doors when all colonies need feeding, and can't see how strong colonies can take more honey than weak ones, except as there are more bees to take the syrup.

The last two years I have used a metal or sheet-iron wash-tub (as a wooden tub might dry out and leak); simply spread over it a tablecloth or any old clean cloth that the syrup could easily go through, and pour two to four pailfuls of syrup into the tub when empty; and 50 to 100 hives of bees will take it up in an hour or so with no fighting or killing one another or trying to rob hives, even those only a few feet away. We have fed out of doors the last 15 years or longer, and see no ill effect from it. It saves much labor. We have no bees nearer than two miles. The bees pile up on top of each other several inches deep, and yet seem peaceable. If we were feeding fewer bees we would put less into the tub. It might be better to use more tubs at a time. We formerly used long flat boxes, but they leaked, and floats would get broken when not in use.

There should be some grass or long straw, a large handful, laid on the cloth in the tub, or some bees will drown. They crawl out on the edges of the cloth. We simply put the sugar into the water — what will easily dissolve—and pour off the top. Don't have it too rich — not richer than ¼ sugar

to ¾ water. We would not feed honey in that way, though one year our bees died off badly in winter, and we had hundreds of combs full of honey in the honey house, badly eaten by worms. We did not know what to do with them, so we carried them out and scattered them around the apiary so the bees could have all they wanted for several days, and they settled down and worked on them quietly, as if getting honey from the flowers. This was the last of July or first of August

Have the cloth that is laid over the tub large enough so the corners will not (or the sides either) get into the tub, so the bees can crawl into the tub. Sometimes I have tied a string around the top of the tub; but this spring I did not, and no bees were drowned.

Roseville, Ill., July 22.

MARKETING HONEY.

Some Very Seasonable and Important Suggestions.

BY WM. A. SELSER.

Both the question of price and the place to market honey depend entirely upon the location upon which the honey is raised. Honey brings a better price, as a rule, when sold at a large market nearest to where it is produced, for the reason that you can familiarize the trade with the location; and if they are pleased with the product they will try to secure it from that location every year. The result of this is, they are willing to pay a little better price for it. The great trouble with the bee-producers throughout the United States is that they are so very busy during the honey season they do not get their honey ready for the market until fall, and then it is not shipped into the market until winter.

In the past number of years, experience has shown that honey brings the best price in September and October; and while trying to hold back the crop, or the facts relating to the quantity of honey produced, may bring a higher price for a while, as soon as the market realizes that there is honey being held back, the price drops. It is always well to get at the facts as they are; and while, seemingly, hiding the facts may help the price temporarily, it destroys confidence eventually, and hurts the price.

The writer has had considerable experience from different locations where bee men have distinctly said there was no honey when a little detective business has revealed carloads carried over. There has been considerable extracted honey carried over the past season, and the chances are that extracted honey will not bring any more this season, but possibly a little less, than it did in 1903.

Comb honey brought a good price in the fall of 1903, which seemed to be maintained through the winter; but so much honey that was held back for still higher prices was forced on the market in February, March, and April, that comb honey has sold in the last three months at a lower figure than it has been known to sell at for many years.

When this is the case the grocer is slow to take hold at the opening of the coming season. When he has bought honey in the late spring as low as 9 or 10 cts. he will let you pass by if you ask him much more than this early in the season, until he is actually compelled to buy it, owing to the call from the consuming trade. I would advise all bee-keepers to take time to get their honey ready for market in August or early in September, and get it to destination by the last of September or early in October. There is more honey sold in October and November than in the other ten months put together.

Philadelphia, Pa.

[The reader can easily prove many of Mr. Selser's statements by looking at the fluctuation of the honey market in the fall and succeeding spring. It is perfectly plain that, if some of the honey that was held back for better prices had been sold at the right time last fall, there would not have been such a terrible slump in the market this spring. I know personally of some shipments that were held back which were finally sold at a large reduction in the spring—shipments which might have saved the producers hundreds of dollars if they had been made in October or even November. Better by far have a little easier market in the fall than a market all smashed to pieces in the subsequent spring. We are suffering at the present time because of low prices during the last six or eight months.

One trouble is that some producers feel that we have "an ax to grind," and have taken our statements with some allowance. The honey-market quotations published for the year ought to show whether we are biased or not.

CALIFORNIA ITEMS.

Phacelia.

BY W. A. PRYAL.

Mr. Root:—I am impelled to send the following notes, mostly in answer to matters that have come up within the last few months. They concern topics appertaining to bees in this State.

The phacelia is common in California. Prof. Volney Rattan, in his "Popular California Flora," second edition, notes some eight varieties. I have seen it growing right up to the edge of the Pacific Ocean, and I don't remember how far inland. I believe it can be found all over the State. Some of the varieties are of rather delicate growth; others are robust. The former are relished by cattle; and where it grows in quantities it is a valuable pasturage. I have found bees working on all the varieties I have noticed, but I do not think it

can be counted on for any large honey-flow.

ANTS.

The little black ants that are such a nuisance to the housewife are becoming excessively common in California. Many kinds of ants are to be found in the State; but these little pesky fellows are an abomination. They are a pest in certain portions of San Francisco. When bees are kept long in one location, ants are a sore annoyance to the apiarist. It is not the amount of honey they carry off, but mostly because they are always in the way. The best way I have found to get rid of them, or, rather, to reduce them to a minimum, is to go over the hives once in a while and kill them. They are best got at by placing a piece of burlap over the brood-nest of the hive, and something between the burlap and cover. The ants will establish a flourishing colony in the warm region thus made. By taking off the cover the pests may be rubbed or otherwise crushed to death. What an amount of eggs these ants produce in a brief period of time! If the hives are on planks or other large pieces of lumber, the ants are sure to nest between the hive and rest, or, perhaps, between the latter and the earth. To get rid of ants you have to hunt for them as you would for a flea, bedbug, or any other troublesome pest. Go for them; turn every thing over, and roust them about. If they are where you can not get at them, treat them to a hot-water bath, or pour some coal oil or crude petroleum into their haunts or runways.

I would not recommend hunting ants on a hot day. If you do, you may stir up something worse than a hornet's nest—yea, a sort of mixture of skunk-juice, bees, and hornets combined. The odor of crushed ants seem to provoke the fighting proclivities of ants as a red rag will stir a bull to devilish rage. Therefore go ant-killing on a cool day, or early in the morning when the bees are content within their little homes.

THE SPORTIVE LIZARD.

Do lizards kill bees (p. 658)? Yes, they often have them for dessert, stings and all. Many a time I have watched the pretty little creatures dart from their hiding-place and grab up a bee and come back to the starting-place on the run, all without stopping. At other times I have seen them apparently quiet, and when a bee came within their reach it would be a case of seeing a bee and then you don't. They are the greatest sleight-of tongue fellows I ever saw. Toads, too, are slick with their mouth apparatus when the opportunity presents itself for taking in a poor innocent bee. How many bees it takes to form a lizard's diet I know not. In sunny places the small quick-running lizards are very numerous. Scare them away if you can; if not, shoot them with one of the small air-guns using BB shot. With a little practice you may be able to make them turn toes and tail over head while they are sprinting after a bee.

POPPY HONEY.

There would be millions in it if we could get enough of it. That some nectar from poppy flowers finds its way into the hives near where these flowers bloom is a fact. Ginseng wouldn't be in it alongside of poppy honey if we could only send a lot of it over to the Celestial Empire. But it would not be right to dope the Chinese in that way, some will say. No, I think it would not, if the honey were narcotic or injurious. My belief is that the honey does not partake of the bad portions of the plant. That it is a nectar-producing plant I know; it is great in pollen too. At our place in Alameda County, some years we have large patches of poppies, mostly of that brilliant and delicate variety known as the Shirley.

San Francisco, Cal.

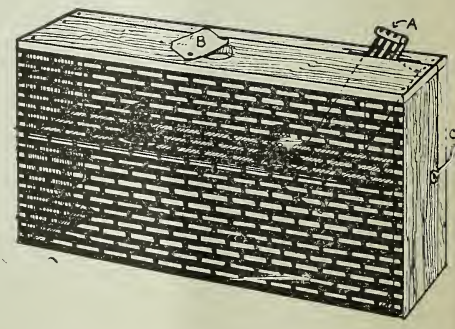
[We have had reports going to show that poppy honey partakes of the narcotic qualities of the plant.—ED.]

DIBBERN'S NEW QUEEN-TRAP.

How it Differs from the Alley Queen and Drone trap.

BY C. H. DIBBERN.

In the first place I want to say that this is no new untried experiment, as I have had them in constant use for the past ten years. True, I have made some changes in recent years; but the general features have remained the same. Now, I do not claim to have "invented" the queen-trap, for that honor belongs to Mr. Alley; but I do claim to have perfected a trap by a gradual system of evolution that is a great improvement in every way. The illustration will give a general idea of the trap; but a few points require an explanation.

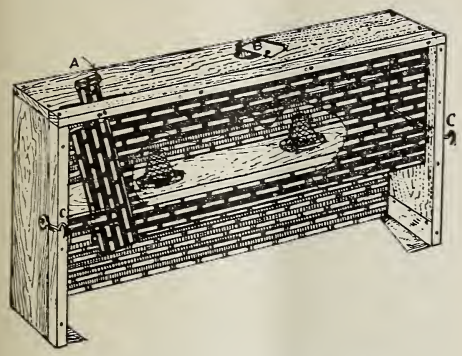


DIBBERN'S IMPROVED ALLEY TRAP, FRONT VIEW.

The wood frame is made, preferably, the size of the hive, if a plain front, of strips 1½×⅜ in., and I give them two coats of white paint before nailing on the zinc. I want the trap to be as nearly nothing as possible, and to give as much *ventilation*

and *light* as can be, and the white color helps immensely.

Right here I want to say that the Dr. Tinker zinc is a great improvement. The entire front is covered by a single piece of zinc, and the back is also covered by a similar piece, but extending only 1½ in. below



REAR VIEW OF DIBBERN TRAP.

the middle slat on which the wire tubes are nailed. This zinc is cut about 1½ in. short, so it will leave an opening from the trap back to the hive. Here a sliding door is provided that can be readily operated from the outside while the trap is fastened by two Dibbern malleable hooks to the hive.

To provide a bee-space back of the rear zinc, strips ½ inch wide are nailed to the rear rim of the trap. The tubes of wire cloth are placed over holes in the middle strip very near the front zinc, as otherwise the queen will persistently follow the zinc, if there is an edge of wood between the zinc and the wire tubes, in trying to escape.

The following are some of the improvements I claim over all other traps: Allowing eight or ten rows of perforations for the bees to pass through, as well as ventilation through the upper or trap part, gives better ventilation. The white color gives more light, both for the bees and the man to see readily the queen when a swarm issues. It is fastened securely to the hive by means of the hooks, and will stay there; owing to the great surface admitting light and air, the queen is far more certainly trapped than in devices allowing only a few rows of perforations in the zinc, to accommodate the bees.

I prefer to call this a queen-trap, though of course it is a drone-trap as well. Beekeepers in general, and farmers, are not much interested in trapping drones; but when it is shown them how easily they can manage the swarming business they become interested at once. The trap, however, can be made very valuable in any apiary in trapping all undesirable drones.

In a future article I will give the general use of the trap, and how I manage to control swarming in an apiary of 150 colonies surely and easily. C. H. DIBBERN.

Milan, Ill., July 18.

[I believe your trap is an improvement over those that have been generally sold; but for some years back we have made the Alley trap somewhat different from the original model, embodying several of the features you show in your trap. We made the lower compartment much larger to increase the ventilation and amount of light, and reduced the amount of room where the drones are trapped above smaller. Then we put the bee-space on the back — a suggestion of some one, I do not remember who. The only practical difference between your trap and ours is the slide or gate that permits of releasing the queen back into the hive without removing the trap (a very good feature, by the way) and a wider extension of metal on the back side, the obvious purpose of which is to force the queen up into the compartment through the cones. Both of these improvements are along the right lines, and the Root Co. may adopt them, possibly, with your permission.—ED.]

FOREIGN COMPETITION.

How Far does it Affect American Bee-keepers?

BY W. K. MORRISON.

Mr. Editor:—Your reference to the rise and development of tropical bee-keeping is accurate so far as it goes; yet some of your readers may feel alarmed at the prospect of serious competition from outside sources. In my opinion there is no need to be alarmed at the prospect. With the exception of Argentina and Chili most of these competitors (or, rather, would-be competitors) are what would be known in the United States as *slow*, with a capital S. They make no claim to being "strenuous" countries, and hence it will be some little time before this competition becomes serious, not to say menacing. Argentina and Chili are, however, formidable rivals, and likely to develop very fast into heavy exporters of honey. These countries are peopled by lively, energetic folks, thoroughly practical and scientific, with lands eminently suitable to apicultural pursuits. Chilian alfalfa honey has a regular market in London at fairly steady prices, higher (or at least as high) than New York rates, hence it is under no necessity of being shipped to the United States.

Argentina is a more dangerous antagonist, coming later into the field of apiculture. The vast areas of that country under alfalfa for grazing purposes form a sort of bee-keepers' elysium. No wonder average yields of 300 or even 500 lbs. per colony are reported. With fine weather for months at a time, and illimitable fields of purple alfalfa, Argentina certainly presents a very inviting field for our chosen pursuit or avocation, for there bee-keeping is subsidiary to cattle-breeding. Still, it is hardly likely that Argentina's honey will be sent to American ports, as higher prices can be uniformly obtained in London, Antwerp,

and Hamburg. Nor is there any prospect of this situation being changed.

South Brazil has long been known as a honey country. Hannemann, the inventor of the queen-excluder, made some famous records down there many years ago. As a matter of fact, bee-keeping does not occupy the same place in Brazilian agriculture it did some years ago. Probably São Paulo City, with its 350,000 inhabitants, would consume the whole local product, and considerably more if the sale of honey were pushed with businesslike methods. Therefore we may dismiss South Brazil from our calculations for the present.

Paraguay, that queer far-away republic, has very few bee keepers within her borbers. Uruguay has more, but not to cut any figure. Taking Chili, Argentina, Paraguay, Uruguay, Rio Grande do Sul, and Sao Paulo together, we have a country as large as the United States, with a much milder climate, and eminently suitable for bee-keeping. Therefore, keep your eye on the Rio Plata countries and the Banda Oriental. They are great rivals of the United States in all lines — cattle-raising, dairying, horse-breeding, fruit culture, sheep-herding, and wheat culture; then why not apiculture?

Further north the next serious competitor is British Guiana, just looming up on the horizon. It is twice the size of Cuba, and is about well adapted to bee-keeping; but that it will ever rival Cuba is to be doubted, for it hasn't a very good name as a health-resort, and the pale faces do not run there in droves. It much resembles Louisiana; and Georgetown, the capital, I regard as a much nicer place to live in than New Orleans. If the climate were as nice as that of Jamaica the country would cut a great figure in the honey market.

Trinidad and the Windward Islands are too small and too populous ever to have much honey to export. Jamaica is a small island which the natives persist in regarding as the leading island in the West Indies, barring Barbados, the hub of the western seas. British Honduras is a very inviting field for bee-keeping — none better anywhere; and if one can put up with a very quiet existence, "far from the madding crowd," this is the country for him, for life can not be more devoid of human interest and excitement than it is there. British Honduras is a fine country for a naturalisf; and with a good house to sell for him in England a bee-keeper need never want for cash, as crops are certain.

All around the Gulf of Honduras the country is a grand one for apiculture. The periodic revolutions are a serious drawback; otherwise their competition would soon be serious. Inland the country is extremely pleasant and salubrious.

The most promising field of all, however, is in Mexico, all around the Bay of Campeche. The leading tree is the logwood, or "campeche," which flourishes on every hand. The mahogany is also a good source of nectar. The country is healthy, and easily reached from New York or New Orleans, particularly the latter. This part of the world offers many tempting opportunities for the enterprise of Americans, consequently there are many on the ground making fortunes out of sisal, sugar, mahogany, etc.; so the bee-keeper would have some one to swap stories of life in the home land, and eat flapjacks with him Sundays.

The island of Haiti, one of the world's most beautiful countries, presents golden opportunities to bee-keepers — when it gets a good government, but not till then. Sometimes we read the interesting statement, "Uncle Sam is going to take care of it." When he does, there will be a perfect scramble among bee-keepers for locations in that isle of beauty and—*honey*.

Now, what is going to happen if all these countries start apiaries on a grand scale? Nothing. Some genius like Phil Armour, of Chicago, will start a gigantic honey-canning factory in some seaboard city, where honey will be put up like roast beef, in cheap packages, to be shipped in steamer loads to the great hungry European centers, and sold to the multitudes at a nominal profit until American honey becomes as well known as Armour's beef or Pilsbury's flour. It is really a very simple problem. Blend the honeys of Cuba, Mexico, Texas, California, Chili, Guiana, Argentina, and all the rest, in gigantic vats, and can by the million. Europe is hungry for cheap honey with a guarantee that it is pure.

So far from trying to keep foreign honey out, I would try to get it in, so as to corner the market, or at least control it, just as Armour did with beef.

There is no better package for honey than the ordinary 3-lb. tin can. The Chicago butchers, Borden's milk, and Maryland peach-canners, have demonstrated this beyond all peradventure, for now these goods are regularly stocked by grocers all over the civilized world.

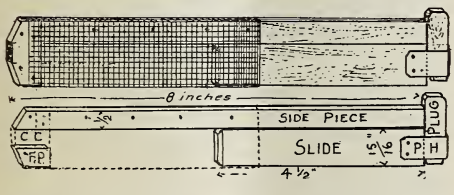
This explains why I hold that the present tariff does us no good. What is wanted is a great agency for taking care of honey in vast quantities, holding it back at times, and distributing over the whole world at low prices to the hungry multitudes.

[It seems to us that Mr. Morrison has gone over the ground very carefully and fully. The fact that the foreign honeys entering the American market are usually of low grades warrants the belief that they will not affect to any considerable degree the prices of American honey, for the duty paid is just as high on a four-cent extracted honey as on a fine table honey. We know there is a steady demand for our better grades of honey for export (our exports exceeding our imports) so we believe American producers should not be greatly concerned so long as the better markets are left. The methods employed in many foreign countries in the production of honey preclude the possibility of their honey rivaling ours.—Ed.]

CALLBREATH'S IMPROVED MILLER INTRODUCING-CAGE.

I send by this mail an introducing-cage which I think you will consider an improvement on the Miller cage. The side-piece extends the whole length, and the wire cloth is nailed to that as well as the short front-piece. In the Miller cage there are two of the short front-pieces, which, with the two tins nailed on, form the space for filling with candy. In this cage one of the front pieces is made to extend the whole length, so that, when putting it in an ordinary entrance with a queen inside of it, there is no danger of pushing the slide-piece in and killing or injuring the queen; and, when removing the cage from the entrance, it all comes out together instead of only the slide piece, as is likely to be the case in removing a Miller cage.

Before nailing on the two flat pieces of tin I bevel off one end of the side-piece and one end of the front-piece. After the tins are nailed on I cut off the projecting parts (with a pair of scissors) to match the wood;



then when I want to fill the candy-compartment all I have to do is to give it two or three jabs into the candy, turning it sidewise each time, and the candy is just where I want it. To prevent the candy from going right on through into the place for the queen I first push the slide-piece clear in against the back of the front-piece, thus closing the back of the candy-compartment.

Sometimes it is convenient to use this as a *confining-cage*. In that case it is necessary to have something besides candy to stop up the front opening with. This plug or stopper I make when I make the cage, and keep it at the back end of the slide-piece by folding a piece of tin over it and nailing the tin to the slide piece. The drawing I inclose will make it plain if this does not.

MEASUREMENTS.

Side-piece, 8×½×¼; front-piece, 1×½×¼; slide-piece, 4½×$\frac{15}{16}$×¼; plug, 1½×½×¼; wire cloth, 6×4½; plug-holder (tin), ⅞×2; two tin cleats, 1×1⅜.

Twelve inches would be the best width for the wire cloth; then, when cut into pieces, there would be one *woven* edge to each piece. That edge should be put on the front end. The back end should be folded under one inch for four reasons: 1. The queen will run in better over a *folded* edge than over a *cut* edge with the sharp points sticking out; 2. They are nicer to handle, as the fingers are less likely to get pricked; 3. It is easier to insert the slide; 4. If the slide is a little loose, so that it is liable to fall out when handled, the double thickness can be pressed in on each side with the thumb and finger, and be stiff enough to hold the slide, while a single thickness is not.

The outside edge that is nailed on the side-piece ought also to be a folded edge.

After folding over the back edge one inch, and the outer side edge nearly ½ inch, I use a stick $1\frac{7}{16}$ wide by $\frac{3}{16}$ thick for a *form* to get the wire cloth in the right shape to nail to the side-piece and front-piece.

I nose off the front end of the slide-piece so that it can not catch on the wire cloth in being pushed into place. It is better to round off the edges also by drawing them over a plane a few times.

In making I use ½-inch wire nails. To cage the queen, remove the slide; take the queen in the left hand; slip the opening between the thumb and fore finger of the left hand, and the queen runs *up* where she is wanted; then replace the slide.

All the wooden parts shou d be of pine, as it swells less than basswood in case it gets wet. JOHN S. CALLBREATH.

Rock Rift, N. Y., July 13.

ACT OF MATING OF QUEEN AND DRONE, WITNESSED BY E. L. PRATT.

I have this day witnessed the act of copulation between a queen and drone. About 2:30 o'clock on the afternoon of Thursday, July 21, I was standing near a fertilizing-box filling a feeder when my attention was attracted by an unusual commotion in the way of extra loud buzzing, as of drones on the wing. I looked, and saw a queen rapidly flying toward the fertilizing-box, evidently her home. She was closely followed by two drones, one of which turned and flew off, but the other remained in pursuit. They were flying not six inches from the ground, and were not over eight feet from the fertilizing-box when the act took place. It was all done so quickly that I marvel at it, and I wish here to record the facts as I witnessed them. I could not see that the queen was flying in any but the usual way when returning to her hive, but the drone was unusually swift of wing. They were both flying rapidly; and as they flew the drone made two circles about the queen as though to head her off; and as these circles were made about the queen she rose slightly each time. Directly after making the second circle about the queen the drone flew at her as a worker flies with the in-

tention of stinging in earnest. His abdomen was curved, and his wings rattled in about the same manner. Directly the drone was in contact with the queen there was a sudden lurch to side, and they went together some distance into the field until I lost sight of them. As they flew together they much resembled workers when they attempt jointly to bear off their dead. I remained by the fertilizing-box perhaps three minutes, and saw the queen return and enter, bearing the marks of having met a drone. I still lingered by the box, and soon saw a worker bear out the tell-tale white speck. I later opened the box, and saw the queen bearing the usual thread from male contact. A queen-bee is very swift of wing; but I am convinced that a drone is ten times swifter; for to be able to encircle the queen in the manner this one did, such must be the fact.

Swarthmore, Pa. E. L. Pratt.

SWEET CLOVER IN THE OATS; A BETTER WAY OF USING THE ROOT-GERMAN WAX-PRESS.

I have three acres of sweet clover, the white variety, which I sowed last year with oats. It is a fine growth, and has been blooming, and the bees have been literally swarming on it for several weeks. It is seeding very heavy, and is free from any thing else.

I purchased a German wax-press of you last winter, and followed your directions as to using it, and was rather displeased with the thing until very recently, as it was so terribly slow. I now use it differently, and am highly pleased with it, as I think I can extract three or four times as much wax in a day as by your method. My outfit is an old cook-stove out of doors; the wax-press, a three-pail copper kettle, and a water-pail.

To start the thing I fill the comb-basket about half full of loosely thrown-in combs, and put over it a pan to confine the steam, and do not use the press. I fill the pail with water, and set it on the back of the stove to be heating, and put on the copper kettle with water therein; and as soon as the water is hot I stir in combs until I have the kettle nearly full of melted combs. I then open the extractor and turn in the contents of the kettle, adjust the press, and fire up. I empty my pail of hot water into the kettle, and refill to be heating for the next batch. I work the press, and melt up a new batch in the kettle; and as soon as the press is ready to dump, another batch is melted ready for it, and so on, melting in the kettle, heating water in the pail, and pressing the wax out in the press.

I can also possibly suggest a slight improvement in wax-presses. If you will notice, there is always a quantity of free wax on top of the cloth covering the cheese after taking out the follower. If this is allowed to cool you will find a portion of the channels on the bottom of the follower filled with wax. The reason is, the cloth presses up into the ends of some of the channels, and thus prevents the wax from flowing out. I took the strips off my follower, and cut channels across them so that, when nailed on, there would be a free passage from one channel to the other, which permits a free flow of wax in all directions. This prevents any accumulation between the cloth and the follower. Henry Stewart.

Prophetstown, Ill.

SUMMER MORTALITY OF BEES DUE TO POISON.

Noting the article on page 694, I suggest that the mortality may be caused by the poisonous nature of the flora on which the bees are foraging at that particular season of the year. I have noticed a certain mortality of bees in this and other locations that was precisely the same in appearance when bees were working on poison oak, or ivy, as it is called in many sections, and have never noticed it at any other season. Sometimes only a few colonies are affected; again, there would be several thousands of bees scattered on the ground throughout the apiary, and nearly all colonies would show signs of disorder. There is not a sufficient quantity of poison oak in this section to afford forage for an apiary; but it is scattered about in very attractive masses of some extent, and is always eagerly sought by the bees. It will probably be found that some poisonous shrub yielding honey profusely exists in those sections, and the remedy or cure for the disease among the bees must be sought for in the source of their forage; and there is the probability that nothing but confinement of the bees — feeding if necessary — during the period of its bloom will afford relief. If confinement should be practicable a release daily at a late hour in evening would be beneficial.

Howardsville, Va. B. F. Averill.

HIGH-PRESSURE FEEDING OUTDOORS.

Since my article has appeared on page 660 I have received letters from the United States and from other places asking for information as to how I go about it, and asking me to give the plan in Gleanings for the benefit of its readers.

The feeder I use is made of the best white pine, well painted and paraffined. The float is also made from white pine ½ inch thick. This is also painted, and should be kept painted, so it will not become water-soaked and heavy.

My feeder is 6 feet long, 2 feet wide, 8 in. deep, and stands 2 feet from the ground, and should be under cover, thus protecting it from the wind and rain. When I am having combs drawn I use equal parts of sugar and water. Nothing is made by feeding sweets too much diluted. I have known of bee keepers here in Cuba to feed their bees with so diluted a feed that they would have to go round the next day and throw out the

sour feed. That is what I call making a five-cent piece hide a dollar. The feeder should be well washed out every day or two so it will always be sweet. As a rule, bees do not like things very sour.

I wish here to impress on the mind of the bee-keeper who has to feed, when once commenced it is far better and cheaper to keep it up every day till finished. When one feeds one day and lets it go for two or three days and then feeds again, it is bad policy. Do not be in too big a hurry to build your swarms up while having foundation drawn —better to let the bees beg a little for foundation. The combs will be far more perfect. Do not try to economize by trying to use starters or half-sheets. Out of the 5000 swarms we have built up, not one starter or half-sheet has been used.

I once passed through a rich man's apiary, and he was using half-sheets of foundation, "Well," he said to me, "I suppose you do not believe in using half-sheets of foundation, do you?"

"No, not yet." said I.

"Well," said he, "I'm too poor to use full sheets."

"Well," said I, "I'm too poor to use half-sheets."

Mr. Langstroth once told me, with much truth, it is far better to have less swarming and have bees in perfect condition.

C. E. WOODWARD.

Guanabana, Cuba.

[Since Mr. Woodward and others have referred to the feasibility of feeding outdoors we have been conducting some experiments here in Medina. Years ago we tried it on inferior sweets; but because there were other bees, not our own, in the vicinity, we finally gave it up; but since that time the other bees have disappeared, and we finally decided to try outdoor feeding again. The results have been entirely satisfactory. Instead of robber bees nosing around, and instead of queen-cell-building colonies refusing to work on the cells at times, or at other times tearing them down when started, they are accepting the cells and doing good work. Indeed, the conditions are very much like a natural light honey-flow, and our boys are able to do much of the work in the yard with comparative peace and quietness Our experience thus far shows that, when outdoor feeding has been begun, it must be continued and not worked intermittently.—ED.]

BEE-KEEPING AMONG THE ROCKIES; THE 20 LB. STONE ON THE HIVE.

Mr. Root:—I wish to express my appreciation of your department of "Bee keeping among the Rockies." Mr. Morehouse can make it interesting. He had a good bee-paper in the *Rocky Mountain Bee Journal*, and my commercial conscience has pricked me several times because I never encouraged him by my subscription.

I notice in GLEANINGS occasionally your fling at the "20-lb. stone" on hive-covers. Acting on your suggestions I left them off, and next morning found between 20 and 30 covers on the ground. May I ask what would be your remedy in such a case? How shall we keep the covers on? Sitting in your office in Medina it must be comparatively easy work to give instruction in bee-keeping; but I have the impression that the bee-keepers themselves who are familiar with the conditions in their locality sometimes know what they want, and why they want it; so until something better is offered I shall stick to the "20-lb. stone," which, in this locality, probably weighs about 5 lbs.

G. F. HYDE.

Lovelock, Nevada, July 26.

[This statement of our correspondent concerning the excellence of the new department was evidently made before he was aware of the death of Mr. Morehouse. This is only one of several statements of a like character that we have received.

If our correspondent imagines that the editorial matter in this journal receives its inspiration at the "office desk" he is laboring under a great mistake. Besides being brought up among the bees from boyhood, I have spent five or six summers among them, working constantly with them. I have traveled a great many thousand miles to study the methods used by bee-keepers in all parts of the United States; and scarcely a day goes by when I am not in close touch with all the work and experiments that are being carried on in all our own yards; and in the eight of the season I go to the outyards, take off my coat, and work with the bees to help the boys out. So much for "office desk" editorials.

Our correspondent is evidently using a quilt or enamel cloth under the covers. If such is the case, a 20-lb. stone or some other sort of fastening is necessary to hold the cover on the hive. But it is the practice of most bee-keepers to dispense with all cloths and quilts. When that is the case the bees hermetically seal the cover on the hive where it will stay until pried off by the bee-keeper with a knife, screwdriver, or hive-tool. I have traveled all through the western part of the country, and been in hundreds of yards; and, if my memory serves me rightly, the 20-lb. stone is used in only about one apiary in a hundred, the great majority preferring to dispense with quilts and cloths, leaving the cover to go over the bees when it will be fastened. If shade-boards are used, then it is necessary to have something to hold them on; but as a rule, even then bee-keepers apparently prefer to seek natural shade, thus dispensing with extra pieces and the lifting of heavy weights.—ED.]

POISONED HONEY FROM COTTON.

J. W. Davidson, of Ditto, Texas, asks if you can give some advice as to the effect poisoning cotton with Paris green will have on bees. Will it affect the honey? I note your answer, Mr. Editor; but the last part

of his question you did not answer—that is, will the poison affect the honey? I am greatly interested in this, and should like to know if it is safe to use honey in localities where Paris green has been used on cotton. S. H. McCULLOUGH.

Lacoste, Texas, July 5.

[The honey gathered while cotton is sprayed, if it did not kill your brood it would probably do no damage to human beings; but before eating it I would suggest that it be placed in the hands of a chemist to ascertain whether it have enough poison to be dangerous.—ED.]

SWARMING TO BORROWING.

I had to hive a swarm three times in June. The third swarm I hived on empty combs began to carry honey from the old hive to theirs. This they did for two days, taking no less than 5 lbs. The bees in the old hive never bothered them at all. To-day I had a ten-frame-hive swarm. I never had them swarm as late as this before. As soon as I hived them I transferred the old colony to an eight-frame hive. I saw two young queens on frames. Bee-men claim a prime swarm issues about 8 days before young queens hatch. How do you account for this? This is the first swarm. They came out yesterday and went back to-day. I saw a queen with them.

Trenton, N. J., July 11. G. GROVER.

[In the matter of swarming, bees vary greatly from the generally accepted rules. They may begin swarming as early as May, and continue on into September. The conditions of the weather have every thing to do with it. Sometimes swarming will begin very early, and at others it will be quite late. The colony that swarmed and afterward went back and took honey from the old hive was simply doing what we call "borrowing," with no intention of returning. It is a species of robbing; but because these bees have the scent of the old colony, the old colony does not put up any resistance.—ED.]

GASOLINE VS. STEAM ENGINES FOR LIGHT POWER.

I have been thinking of purchasing a gasoline-engine, but don't know what kind to buy. I have read GLEANINGS long enough to know you are a practical man, and know something about machinery. I take the liberty of writing and asking you. I have a catalog of the Olds, Alamo, and Weber. I think the Alamo the best-looking machine. Is the gasoline-engine a durable machine? Are they safe? Does it cost much to operate them? G. F. TURNER.

N. Palermo, Maine.

[Gasoline-engines are a little more difficult to handle than an ordinary steam-engine, but much more economical to operate, and are ready for instant service at any time—no need to wait to generate steam; no danger of burning out boiler, getting water too low, and no danger from explosion providing a light or flame be kept away from the gasoline-tank. Even then there is no more hazard than in the use of gasoline-stoves — indeed, not so much, because the heat or fire is generated wholly within an iron box, the cylinder. The gasoline-engine is very durable, and will outwear with less adjustment than a steam-engine, for the simple reason that it is "single-acting" and not double. Our experience has shown that the boxes may be very loose and still the engine will run very well. The relative cost between steam and gasoline for the same amount of power per hour is about 50 per cent in favor of gasoline. Any of the engines named in your letter are good.—ED.]

BINGHAM SMOKERS AND ROOT'S EXTRACTORS CRITICISED BY A FRIENDLY CRITIC.

As we in California have nothing to do but get ready for next year we have much time to think and tell the other fellows what they should do. I will first tell you what I have done, then tell you what the Root Co. ought to do, also Mr. Bingham.

I have produced 15 cases of extracted honey with 250 colonies of bees. That is something. Now, Mr. Editor, I think your invitations of well-meaning criticism are along the right line; for if the manufacturers are not criticised for the goods they turn out it is natural for them to suppose they are making things *just* right; neither do I believe in a fellow venting his spleen. If we see or imagine we see defects (for we may be honest in our opinion and still be mistaken), let us call attention to them, then offer suggestions to remedy the evil.

I most heartily indorse the criticism of the Bingham smoker—not the principle, but the smoker. It is all right, "only needs fixin'." I have never had one yet (and I have bought several) but I had to fix it. They might be all right to manipulate three or four colonies with, but three or four hundred is different. Neither is it necessary for a *good* smoker to cost $5.00. My suggestion is that Mr. Bingham take two pieces of about No. 20 or 22 iron; cut them ¼ inch wide; bend them round so as to fit snugly around the barrel of the smoker; then fasten them to the bellows with two bolts in each end of the straps; also metal around the edges of the bellows to hold the leather; also No. 18 ¾-inch brads instead of the ¼-inch tacks. A smoker made that way would be serviceable without having to be made over.

As to price, it should not cost much more than the present smoker. Let Mr. Bingham put out the two smokers, sell each at a reasonable profit, then there will be no "kick" coming to any one. Mr. Bingham may take his seat and Mr. Root stand up.

The Cowan extractor No. 25 is a good machine; but as the Root Co. makes it it needs "fixin'." In extracting honey I always work from right to left. Hot water

and honey-knives are at the right hand of the uncapping-box. Take the knife in the right hand; hold the comb in the left. After uncapping, step to the left and place the comb in the extractor. Take hold of and turn the crank with the left hand. Keep the right hand free to turn the baskets and handle empty combs with, the honey emptying out of the gate next to the uncapping-box. Now, in order to do that I had to reverse the frame that holds the gear; and by doing that it puts the brake-handle on the opposite side of the shaft from the operator. Now, the "fixin'" necessary was not much, but it caused me a twenty-mile drive to get a drill and tap to make the right hole to fit that screw. The next machine you make, put two holes in the hub of that brake so that it can be reversed and used either right handed or left. No, don't sit down yet — one thing more. The next machine you make, put a strap of good firm leather on for a brake instead of that spring steel, for the steel lasts only a short time; and, besides, it cuts the pulley that it rubs on. The leather is better in every respect. You may take your seat now; and if you will be good I may never call you up again.

Norwalk, Cal. J. W. GEORGE.

[The publishers of this journal are always glad to receive friendly criticisms from friendly critics, both on the contents of this journal and on the supplies they make for bee-keepers. We are sure Mr. Bingham will not object to those relative to his smoker, although from a mechanical point of view he may see a better way to remedy the trouble.

We thank you sincerely for the suggestions regarding the Cowan extractor. We had already anticipated some of them, and the 1905 machines will have a different form of brake entirely; but as to making it (the brake) reversible, we had not thought of that, but will take the matter under careful consideration.

I often see where improvements can be made in certain automobiles that I have had the pleasure of running. Sometimes I have written to the manufacturers, suggesting, in a friendly way, how in my opinion certain difficulties might be avoided. As a general rule I do not get a word of response or thanks; and as long as they "know it all," their machine will go on with the same old defects. The result will be that a competitor who is more progressive will take the trade away, and he should. I firmly believe that a manufacturer or builder should listen to all complaints or suggestions regarding the stuff he makes; and if he will not listen, the user or consumer should not be censured if he goes to the "other fellow" to get what he wants. But it very often happens that a suggested change is *not* an improvement at all; but all persons making such suggestions should receive a courteous answer and explanation why their ideas, if adopted, would be a retrograde step.—ED.]

TOO MUCH SWARMING, AND LITTLE HONEY.

Can you tell me the reason our bees swarm so much? We let each colony swarm once, and then we put on top boxes, and the bees started to work in them, and worked in them one day, and then stopped, and have swarmed twice since, and do not seem to work as they ought to.

HOLMES H. TINGLEY.

Lowell, N. B., Can.

[A little honey-flow is quite apt to result in more swarming than a heavy one. Conditions some seasons are just right to cause bees to do what they did in the case above. The fact that you have had excessive swarming, and the further fact that the bees did not seem to work as they ought to, would seem to indicate a light honey-flow; but usually after a swarm has been hived it will stay contented and go to work in the supers But in your case it would have been better, perhaps, to have put a frame of unsealed brood in the brood-nest, as this would have a tendency to hold the bees better.—ED.]